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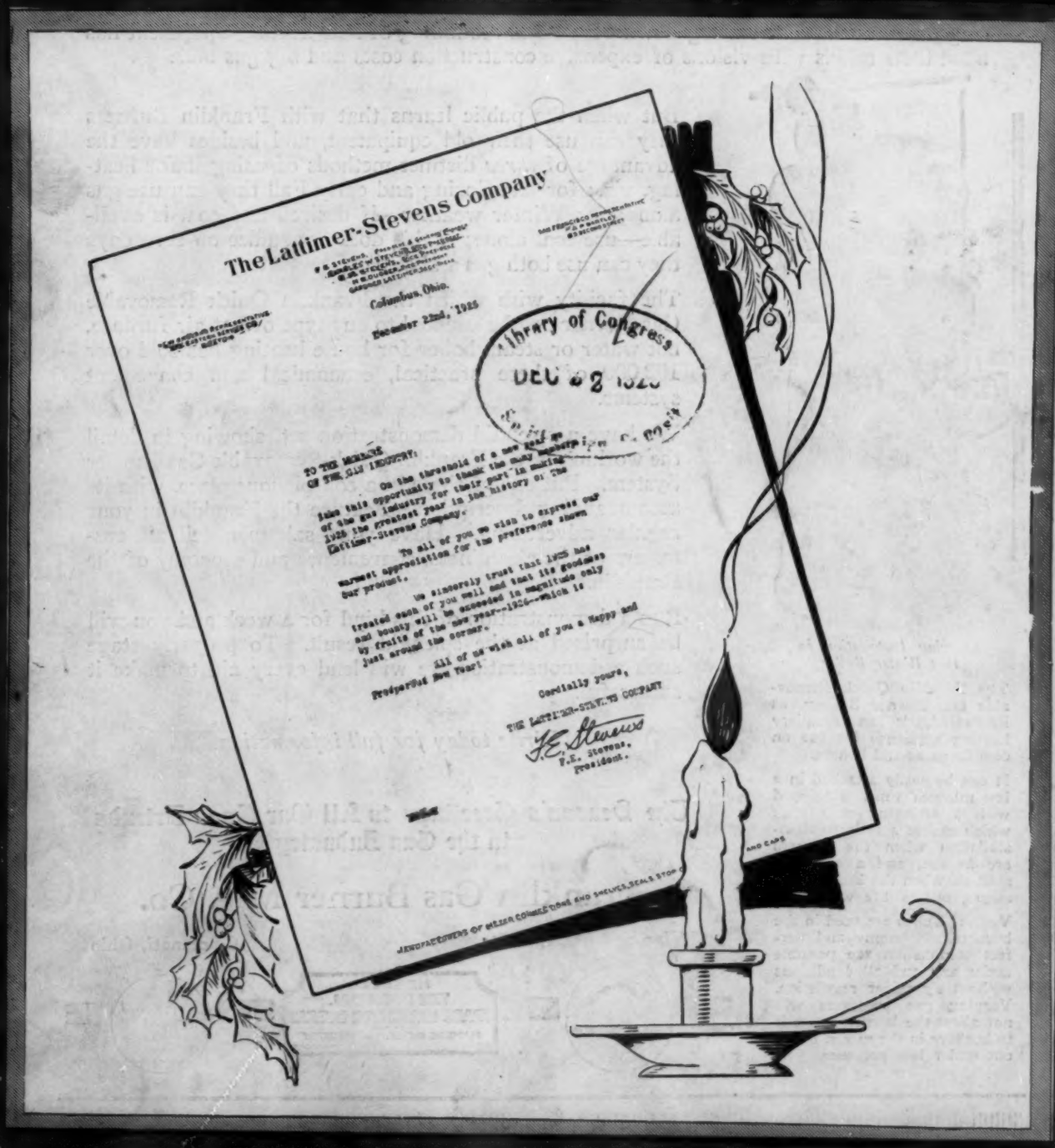
The Lattimer-Stevens Company
Columbus, Ohio.
December 22nd, 1925
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TO THE READERS
OF THE GAS JOURNAL:
On the threshold of a new year we
take this opportunity to thank the many supporters
of the gas industry for their part in making
1925 the greatest year in the history of the
Lattimer-Stevens Company.
To all of you we wish to express our
warmest appreciation for the preference shown
our product.
We sincerely trust that 1925 has
treated each of you well and that its goodness
and bounty will be exceeded in magnitude only
by fruits of the new year--1926--which is
just around the corner.
All of us wish all of you a Happy and
Prosperous New Year!
Cordially yours,
THE LATTIMER-STEVENS COMPANY
J.E. Stevens
J.E. Stevens,
President.

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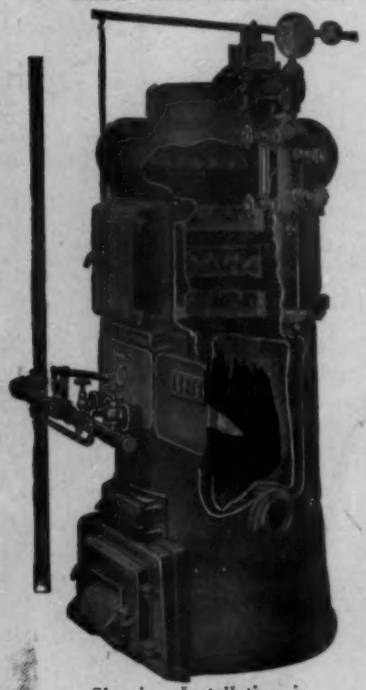
THE FRANKLIN BURNER

Requires No Extensive Alterations in Existing Heating Systems

The Franklin System overcomes the mo st serious objection many people have to the use of gaseous fuel. The tearing down of old and rebuilding of new heating equipment has filled their minds with visions of expensive construction costs and big gas bills.



Showing Installation in Hot Water Boiler

The Franklin Quick Removable Gas Burner System, as illustrated, is an auxiliary heating appliance for use on coal furnaces and boilers.

It can be easily attached in a few minutes' time. Equipped with a swinging stop cock which makes a leak-proof installation when the burners are in use, and a complete shut-off when the burners are swung out of the way.

Venturi Tubes are used in the burners. Economy and perfect combustion are possible under any and all conditions without air mixer regulation. Varying gas pressures will not affect the burner, cause it to backfire in the mixer, or go out under low pressure.

But when the public learns that with Franklin Burners they can use their old equipment, and besides have the advantage of *three* distinct methods of using it for heating, viz.: for late Spring and early Fall they can use gas alone; for Winter weather—if desired and coal is available—use coal alone; if this does not suffice on zero days they can use both gas and coal.

The facility with which the Franklin Quick Removable Gas Burner can be adapted to any type of hot air furnace, hot water or steam boiler for house heating has sold over 102,000 of these practical, economical and convenient systems.

We have a splendid demonstration set, showing in detail the working of the Franklin Quick-Removable Gas Burner System. Put one of these in a conspicuous place, with its accompanying description. Feature the Franklin in your regular advertising. Have your salesmen tell all customers of the cleanliness, convenience and economy of the Franklin.

Run a demonstration of this kind for a week and you will be surprised at the splendid result. To properly stage such a demonstration we will lend every aid to make it successful.

Write today for full information.

The Season's Greetings to All Our Good Friends in the Gas Industry

Franklin Gas Burner Mfg. Co.

Vine and Mitchell Sts. **Cincinnati, Ohio**

MEMBERS THE NATIONAL TRADE EXTENSION BUREAU OF THE PLUMBING AND HEATING INDUSTRY

GLOVER-WEST
Vertical Retorts

1911 FITCHBURG MASS.

1925 AFTER 14 YRS.

Continuous Satisfactory Service

WEST GAS IMPROVEMENT CO.
of America, Inc.
441 Lexington Ave. New York.

American Gas Journal

SIXTY-SEVENTH YEAR

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"MEMBER OF THE AUDIT BUREAU OF CIRCULATIONS"

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Fuel of the Future--What Shall It Be?

XXVIII. Heat operations in the non-ferrous metal industry

Ismar Ginsberg

IN the previous articles of this series, which have been concerned with the use of heat in the non-ferrous metal industry, there have been described the general characteristics of the industry, the properties of alloys in general and the common details of the alloy melting process. We have now reached the point where we are ready to consider the application of heat to one of the most important of all alloys and the most significant of all the copper alloys. We are speaking of the metal brass.

It has been mentioned previously that the pure metals sometimes possess properties which make their use impossible for certain definite purposes. It has also been shown how it is possible to remove these disadvantages by properly alloying the metal with others. Thus, in brass, which is an alloy of zinc and copper, the disadvantages of both zinc and copper are removed and a product is obtained which, because of its special and advantageous properties, finds use where neither one of the constituent metals could be employed. This is true of many other metals and their alloys and constitutes the main purpose of alloying metals.

What is Brass?

It is commonly known that brass is a composite metal, an alloy, which contains both copper and zinc. It is not such common knowledge that there are a comparatively large number of different brasses which possess entirely different properties and which are differentiated from one another mainly by the variant proportions of copper and zinc found in them. Theoretically, there are, of course, an infinite number of brass alloys, for it stands to reason that any proportion of zinc or copper, from zero to 100 per cent of each, can be found in the alloy, the two proportions always adding up to 100 per cent, not including, of course, the impurities, that is, other metals, such as iron, tin, antimony, etc., that are always found in the original metals. Their presence is due to the occurrence of salts of these metals in the ores from which the zinc and copper are smelted. But only a comparatively few of these combinations, known as the brasses, are of commercial importance.

The brass industry today is a very large and important industry. Brass has been made in practically all civilized countries for a great many years. It is said that the industrial manufacture of brass started in Germany in 1550. Its manufacture was introduced into England in the year 1781.

Properties of Brass

Brass is a mixture of copper and zinc as the essential ingredients, but it is hard to find a brass that does not contain small proportions of iron, tin, arsenic and lead. Sometimes these metals are added in order to give certain special properties to the alloy. Thus it is possible in this manner to alter its fusibility, ductility, etc.

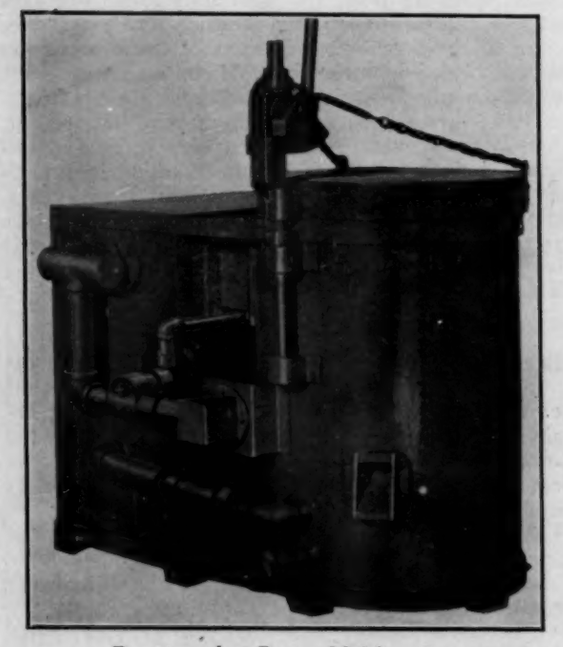
The reddish color of brass is, of course, due to the copper that it contains, and this color becomes more golden the more copper is found in the alloy. On the other hand, as the zinc content increases, the color becomes lighter and finally a grayish white color is obtained. As the copper content increases, the metal becomes softer and more malleable and as the content increases it becomes more fusible, brittle and harder. Furthermore, as copper is the more expensive of the two ingredients of brass, the greater the percentage of copper in the metal the more expensive it will be. It thus follows that in the melting process accurate control of the operation is essential in order not only to obtain the alloy that it is desired to manufacture, but also to maintain the economy of the process. A well-regulated, gas-fired furnace has, therefore, decided advantages.

The Uses of Brass

Just a few words regarding the uses of brass which will indicate clearly the importance of this alloy. It is employed in the arts for the construction of all sorts of scientific apparatus, mathematical instruments, small parts of machinery, etc. All sorts of toys, parts of furniture, piping, etc., etc., are made from it. In fact, it is the premier metal to use where both strength, malleability and permanency are desired. Its uses are really legion in number.

Importance of Exact Composition of the Metal

It has been mentioned several times that it is essential to know the exact composition of the alloy that is being manufactured in order to obtain a product that is possessed of the proper qualities and that is manufactured at the lowest cost. In the manufacture of alloys it is essential to know what is going on in the furnace, so that the finished product may be obtained in the proper condition. The choice of a suitable alloy for any particular purpose is, of course, a matter of experimentation, but after such composition has been determined it is necessary to



Recuperative Brass Melting Furnace

see to it that conditions in the melting furnace are properly controlled, so that the alloy that is obtained always contains the zinc and copper in the proper proportions.

There are many agencies which affect the composition of the finished alloy. Thus, it is possible that a certain proportion of one ingredient or another may be lost by volatilization or oxidation. Then, again, even when oxidation and volatilization are unavoidable and are discounted, still the composition of the alloy may vary, due to the fact that more of one ingredient will be volatilized than the other. There are also other reasons why the composition of the alloy will vary. Thus, one metallic ingredient may have a strong action on the salts of another. For example, zinc has a strong reducing action on the oxide of copper and when a comparatively large amount of copper oxide is present in the copper it is easy to see that the composition of the finished alloy will not correspond to the calculated composition.

Action of Combustion Gases

Then, again, there is the action of the burnt and unburnt gases of combustion, such ingredients as nitrogen, carbon dioxide, carbon monoxide, sulphur dioxide and the like, all of which have a certain action on brass resulting in variation of the composition of the alloy. It is essential that the industrial gas engineer understand the effects that are produced by all these factors and their importance, for he will have to furnish a gas-fired furnace for carrying out these heating operations which will be expected to reduce these losses to a minimum and to remove the inconveniences that are peculiar to the process.

Oxidizing and Reducing Atmospheres

The essential condition in brass melting is to obtain a flame which has as little oxidizing effect as possible. This simply means that there should be as little excess air used in the burning of the fuel as can be gotten away with without risking loss of fuel values in the flue gases. It is well known to the gas engineer that the more complete the combustion the more heat will be developed. Thus, when one pound of carbon burns to carbon dioxide, there are developed 14,540 British thermal units, but when the end product is carbon monoxide in place of carbon dioxide the heat developed will be only 4,380 units. But it is a fact that in an industrial furnace it is possible to obtain complete combustion only when an excess of air is employed over that which is required to effect complete combustion of the fuel.

Gas Requires Least Air Excess

It has been shown in previous articles of this series that of all the fuels, including coals, coke, oil and gas, gas requires the least amount of excess air in order to be completely burned. This is due to the intrinsic character of the gaseous fuel, to the fact that it is possible to obtain a very intimate mixture of the gas and air, and even more particularly to the fact that, of all the fuels, gas is in the proper state to enter into combustion reactions when it used, while all the others must first be converted into the gaseous condition before they can enter into the combustion mechanism. Thus every furnace, burning solid or liquid fuel, acts first as a gasifier, and it is needless to say that it is not nearly so easy a

(Continued on page 664)

Public Utility Privileges and Obligations

A discussion emphasizing the importance of mutual responsibility

P. H. Gadsden

U. G. I. Co., Philadelphia, Pa.

WHEN the first public utility, probably a water company, was organized, the general conception of the operations and functions of that utility differed in no essential degree from the conception of any ordinary business. The public looked upon it as a private enterprise, and the owners and operators of the utility considered themselves engaged in a purely private venture in which they were entitled to charge whatever the traffic would stand. and to give that quality of service which they thought best. That was true, as time went on, with the gas companies, the street railways and the electric light and power companies. As a result the public on one side was arrayed against the public utility operators and owners on the other. They were like two armed camps and when they got dealing with each other they dealt on the principle of a horse trade—it was a question of which could get the better of the other.

P. H. Gadsden

Obtaining Franchises

The public utility men sought franchises, which in those days were considered of great value, and used their best efforts to get those franchises on the most favorable terms. Days, weeks and months were spent in negotiations between the various parties as to what the price of the service should be, and having agreed upon those terms, each party thinking he had made the very best contract or trade that he could make, and that he had put it over the other fellow, signed a contract extending as long as he could possibly make it. I have known some for fifty years, with terms absolutely fixed—quality of service, characteristics of service and the prices they charged. It is easy to see that a relationship of that kind lent itself readily to a great deal of trouble, since in the course of time a hard and fast contract of that nature inevitably bore inequitably on one party or the other, and as soon as it did, that party tried to get out of the contract. As a matter of history, the parties which first attempted to get out of such inflexible, definite term franchises, were the municipalities.

In the 80's and early 90's, when the price level was gradually going down, the municipalities naturally thought that gas, water or street railway prices, which were fixed on a higher level of prices, should go down with the cost of living. They made strenuous efforts in the courts to unshackle themselves and break loose from these contracts so that they could insist upon lower prices. However, the courts held that these contracts were like contracts between ordinary individuals, they were inviolable.

Adoption of Public Service Commissions

The first recognition on the part of American people of the true relationship which existed between a public utility and the community was shown in the adoption of what has now come to be known as public service commissions. Their adoption was strenuously opposed by the public utilities and equally strenuously advocated by the public, because the latter thought that such regulation would lower the price. The public had no conception of regulation upward, but regulation downward.

However, gradually through the operation of the public utility commissions we have come to realize that the real basis of the relationship between the utilities and the public is not that of barter and sale; it is not that which exists between a merchant and his customer. It is a question of a mutuality; their interests when properly considered are absolutely identical.

Mutuality of Interest

The thought that I want you to bear in mind tonight as I go along is, that instead of two contending camps with the interest of the utility arrayed against the interest of the community it serves, that their interests are absolutely identical, they are reciprocal, and that the real test of any question which affects a public utility is not whether the executives of the utility think some proposed action is a good thing, not whether necessarily it is a profitable step for the utility, which is a proper consideration when testing the true nature of any policy confronting a public utility, but whether it is in the best and highest interest of the consumer of the utility, because if it is good for him, it is good for everybody else. I do not mean temporary advantages. I do not mean that he would be benefited by getting gas for 50c, we will

*Delivered as a lecture before the School of Commerce, Temple University, Philadelphia, Pa.

say, but I do mean that if in a broad view of the question that policy which is adopted is for the best interest of the user of the utility, then it must necessarily be good for the stockholders of the company, and it must be in the highest interest of the employee of the company.

Economics Basis of Relationship Between Public and Utility

That leads me to this thought, that the true basis of relationship between the properties in which we are all interested and the user of the utility is economics. If we as a people in this country had a thorough knowledge of the science of economics (which we have not) most of the questions which have vexed the public and the public utility companies would have disappeared. And we are just beginning to get a dim perception of the truth of the fact that, if we can get at the fundamental business principles, the economics of the relationship between companies like ours and the man who has a use for our service, most of these very troublesome questions will solve themselves, and I am going to attempt to show you this evening in a brief way what I mean by that.

In other words, that this relationship is a reciprocal one, that as in most problems in life—and according to my study—in all economic problems wherever there is a right there is a correlative obligation. One is a complement of the other. If a company has a right to do a certain thing or to charge a certain rate for rendering a certain kind of serve, there is a corresponding obligation on the company to see that that service is what the community pays for. In other words, we get out of this situation just what we put into it, as you do with everything in life, in all walks of life. You and I in our business get out of our business exactly what we put into it.

Credit

Consider the question of credit. The ordinary merchant when he organizes a corporation for say $100,000, or a half million dollars, does not as a rule have to consider increasing his capital any more. If he needs more money in his business, he takes it out of profits, and it is an unusual thing for the ordinary business concern to increase its capital by soliciting new money. On the contrary, a public utility is in need of an increase in capital every day in the year—every time a new meter is installed, or a pole is put up, or a wire strung, a street car or a cash fare box bought. Where is the money to be gotten? Not out of the profits, but from additional stockholders. Therefore, one of the great differences between the utility business and any other line of business is that they are dependent absolutely upon the maintenance of their credit. "Now," you will say, "that is a matter in which the utility itself is entirely concerned." The ordinary man of the street, some of our newspaper friends, will say, "We have nothing to do with that. That is your business. If you haven't got the credit to buy these things, you're just out of luck."

Rates and Service

Ordinarily in any meeting of public utility men a large portion of the program is in reference to rates that the companies are entitled to change. We must not forget that whatever right we have to charge a rate carries with it the duty and obligation to render a service, and a service commensurate with the rate we charge. On the other hand, the public's right is to demand the very highest class of service which the rate will pay for, but the public in the course of years has become so accustomed to the very highest standard of performance on the part of public utilities all over the United States that it takes good service for granted. It never occurs to the public that there is any difference in the quality of service; they have their minds concentrated on the question of price alone. It does not occur to them that one gas service is not similar to another, or one street railway service is the same as another.

You hear them frequently comparing street railway service in Philadelphia with Chicago, New York or New Orleans, or the gas service here with some other place, on the general assumption that all conditions are the same, that there is only one kind of transportation, only one kind of gas service. We know that this is not true. Necessarily the product which we manufacture differs in degree just like any other manufactured article does. The public as a whole does not fail to recognize the fact that if they pay one price they get one quality of goods, and if they pay a lower price they have to content themselves with a poorer quality. And yet, when it comes to a public utility service, they say, ruthlessly, "Cut down your gas rate 25c. Reduce your electric light rate 15 per cent or 20 per cent"—on the assumption that the same high quality of service is going to be rendered.

Personnel

Let us consider the question of the relationship of the employee. It is a familiar story to us all, that unfortunately, until very recent times, very little consideration was shown for the human equation in these great companies of ours. Each employee was expected to do a certain assigned job, at a rate per month, and it never occurred to anybody that the employees should be let into the policies of the company, or that they could be in any way contributory to bringing about better public relations. So that when this great question of public relations began to be knocking at the public utility door, when the executives of our great companies began to realize that there was something, after all, beyond the mechanics of this industry, that the engineers or chemists did not know it all, there were some of us on the side lines who had some views about what the public ought to have, and we began to wake up to

the fact that perhaps these employees of ours would help us out.

Public Relations Predominating Problem

At this time we are beginning to realize that this great problem of public relations—which, in years to come, in my judgment, is going to be the predominating question in public utilities—could not be solved by experts, could not be solved by one man or two men, could not be solved by engineers alone, but it required mass action. Then we began to find some use for the employee other than the mere job that he was on. We began to find out that he had a place in this great picture of ours, and that he could do, collectively, what we could not do. And we found it out because the pressure of the necessity of reaching that public made us find it out. We did not find it out otherwise, we found it out because we could not reach the public any other way. So that there again you come back to this interchangeable situation, this reciprocal idea, upon which I am dwelling so extensively, because as you go along with these lectures, some in special lines, I want you to carry in the back of your heads the thought—"How is that going to fit in with the fellow in the street?"

"Regulated Monopoly"

We have gradually developed a public utility philosophy in this country which is recognized as "regulated monopoly." Up to twenty years ago the idea was that these great properties would be regulated by competition; that there would be a competing street railway, a competing gas company. We have outgrown that viewpoint and now recognize that in the highest interest of the public these properties should have a monopoly regulated by law. That is a very great right and is a great privilege on the part of the public utility, since it carries with it the correlative obligation to render courteous and good service at a reasonable rate. If it does not do this, the monopoly falls down. Here again, every time that we insist upon a right, we must bear in mind that it carries with it the highest kind of an obligation. One of the obligations which naturally flow from the enjoyment of a monopoly on the part of a public utility is the duty to keep the public fully informed, because you can see that if we are going to have a monopoly of a street railroad or gas or telephone service in a community, if the public is to exercise wisely their power of regulation of your rates and service, they must be fully advised of your affairs.

Publicity

That is such a new doctrine that it is not accepted yet, generally, in the public utility field. It is just beginning to be appreciated by the executives of our companies all over the United States that we have no inherent right to keep the affairs of our companies to ourselves. The public pays for them, the public has granted us a monopoly, and the public has a right to say to us, "We want to know all about your affairs in order that we can intelligently regulate them." I can recall not very many years ago when no one thought of telling the public anything about the business. If we had an accident on the road, we would not let the newspapers know anything about it. The newspaper reporter would come around and we would not naturally mislead him, but we would not tell him anything, and what was the result? He would make up a story, which would be a much worse story than the facts were. I have said on another occasion that it seemed to me that in years gone by, instead of publicity the rule in public utility matters was "secrecy, silence and suppression," and we thought that it was good business. As a matter of fact it was the very poorest policy imaginable. And we are just beginning now to appreciate the great advantage to companies like ours of taking the public into our confidence, telling them the facts.

Business Optimism Prevails

Farming communities provide purchase movement and business volume grows

L. W. Alwyn-Schmidt

THE coal strike and its resulting market insecurity have, no doubt, retarded the improvement of the economic situation. But its effects so far have not been sufficiently severe to cause a standstill. On the contrary, business, having once made up its mind to accept the standards of better times, has joyfully continued to act and talk prosperity. It is, of course, not quite clear yet whether it will be able to maintain this attitude. Even the most confirmed optimist may be forced to accept defeat through a superiority of cold facts. As it is, however, business is taking just now the sane view that a coal strike may very well unsettle the market, but cannot overthrow permanently a strong, fully developed buying movement.

The optimists have on their side the obvious fact that, strike or no strike, the nation will have to eat, clothe itself and provide for housing. Having passed through a period of saving, there is everything in favor of a tendency of increasing expenditure, the correctness of which is amply borne out by building statistics, retail distribution and bank reports. Every form of saving can in itself have no

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National Co-operative Sales Program

Details of the Commercial Section plan for "Orange Star" home

DURING the period of readjustment, following the great war, there has gradually come into being a surplus of economic goods for which commercial organizations are forced to find new outlets or new markets. With greater and keener competition for a larger portion of the average consumer's dollar, commercial organizations are studying the potential markets in the hope of finding new methods whereby they may reach a higher degree of sales efficiency at lower costs, and create a greater demand for their products.

During the past few years science has made a great contribution in the field of production. As a result we have had a phenomenal industrial growth and development in America. Today, however, the problem confronting us is one of scientific marketing. It is rather unquestionable that the markets of the future are to be won only through the application, to the field of distribution or selling, of the same fundamental scientific methods which were so successful in the field of production.

In this period, the engineer has dominated in organized business, for, to a great extent, the problems were largely of an engineering nature, but with the emphasis on selling and marketing the commercial man must assume his rightful place in the business of the country, particularly so in the utility industry, for we are creating a new science, that of commercial engineering, which embraces the art of salesmanship.

The National Co-operative Gas Sales Plan has been designed for the purpose of expanding the present domestic markets for gas usage and equipment and to develop new markets for domestic gas service and equipment.

It is timely that we consider the national co-operative marketing plan in order to maintain our present domestic market and expand that market as the result of scientific research and marketing. What we need is a big marketing idea around which the industry can rally and concentrate all efforts on the main objective.

The Twofold Objective

In the suggested plan our objective is two-fold. Our first purpose is to create a public acceptance of the fact that gas consuming equipment should be constructed in accordance with standard specifications based on minimum requirements in the interest of correctly designed and constructed equipment in order that the product—gas—may be conserved and at the same time used economically and efficiently. In turn, the public must be assured that our requirements provide for proper operation and ventilation in order that the public's health may be properly safeguarded. To this end, we propose to co-operate with the Laboratory Managing Committee and symbolize their work in standardizing the specifications for all types of equipment by trademarking that equipment and creating a national public acceptance of the symbol and what it represents. Therefore, the five-point orange star has been tentatively agreed upon as a trademark or symbol.

This provides a basis for a national campaign to induce the public to purchase nothing but A. G. A. specification appliances, and in turn to urge all dealers and gas companies to sell nothing else.

Selling a Complete Installation

The second purpose of our National Campaign—and the one deserving of the utmost consideration—is to increase the sale of gas. We propose a means of increasing consumption through present domestic meters, of turning unprofitable customers into desirable accounts and of developing a market for additional appliances, both in new and old homes. To do this we plan to create a public realization of, and desire for, adequate gas service and appliance installation as a unit on a par with plumbing and electric wiring units.

It takes considerable time and is very expensive to sell the complete domestic installation to a customer with a "piece at a time" policy. Furthermore, it is decidedly difficult to meet competition with such a policy. To solve this problem, the Managing Committee of the Commercial Section proposes the second phase of the national campaign. The five-point orange star with no reference to the laboratory on the star may be redesigned with a circle around the points in which is written "The Sign of a Modern Home." It is the belief of the committee that this idea thus symbolized or trademarked can and must be sold to the public in order to create a new standard and a new concept of an adequate, convenient and economical domestic gas service.

Operation of Plan

The operation of this plan is based entirely on the local activity. However, the local activity to be successful must tie in all other special groups such as architects, builders and the like, together with the manufacturers, in creating a public acceptance of this idea, which in turn means a greater volume of sales.

The local gas company or local co-operative organization involving co-operation with plumbers, dealers and the like, may obtain the use of this national emblem by complying with certain organization requirements.

The basis of the plan is that each community will develop what they consider the minimum requirements for a modern gas-equipped home. Such requirements might involve the character and number of pieces of equipment to be installed in the complete gas home. It also might involve the number,

(Continued on page 660)

GAS MERCHANDISING

Domestic – Industrial

Ideas for the Man Who Sells

William H. Matlack

PICTURES

PROVIDE your salesmen with photographs of new and model installations of appliances. Pictures to show the prospective buyer. Every woman is interested in what every other woman is doing to make home management more efficient, and for the appliance salesman there is nothing that will tell this story better than a photograph of a model installation.

TAKE IT FROM THE CHINESE

NOT so long ago someone, we do not venture to say who, dug up an old Chinese proverb which says: "One picture is worth a thousand words," and since then the proverb has gone the rounds and there are a lot of folks who say: "I have always said that. Why, what would an advertisement be without a picture!"

That is the question. What would it be worth? We do not know, yet we have seen and read some mighty attractive, convincing advertisements that had no pictorial attention getter, and, again, we have read advertisements because the picture part of the advertisement told a story, flagged our attention. Then, again, we have seen advertisements that were mighty good pictures. But we cannot settle the question, and what we started out to say is that the Retail Ledger has uncovered the original (?) proverb and we are reproducing it for your scrap-book or to present to the fellow who keeps on talking about his line after you have placed your order.

EXPOSURE

WHEN you "spread it on" with a full page or double-truck advertisement or any other kind, for that matter—expose the advertisement in your store, the shop and on your window.

Every employee of the company should know all about every sale you put on, price, terms and merchandise you are offering at a special sale.

A BARGAIN SALE

THE Consumers Gas Company, Miami, Oklahoma, used newspaper space to advertise a bargain sale of used and shop-worn gas appliances. This is an idea that many gas companies may adopt with profit. Get all ranges, taken in trade, those recovered for non-payment and all shop-worn or slightly damaged appliances, cleaned up and place them on sale for one week at a bargain price. In pricing them use a special tag, at the top of which have printed "Bargain Sale." In advertising the sale, state frankly just the kind of merchandise you are offering, as the Consumers Company has, or by listing the kinds of appliances and the prices thus: "——— standard gas range, 1924 model, sold for $——, slightly damaged; Bargain Sale price $——."

Did He Sell the Gas Range?

A lesson in salesmanship

J. B. Dillon

IT was a lady customer. Her daughter was to be married Christmas and she wanted to give her a gas range as her Christmas-wedding gift. It was a store wherein she had a charge account and liked their deferred payment plan. It was from this same house she had purchased her own gas range, some years previous, liked it, and declared that it was the best on the market, but the house was now handling a different make. Herein lies our story.

"Now, see here, there is no use showing me that thing; I want the ———."

"Well, Madam, the ——— is a mighty good gas range and I would be glad to show it if we were handling it, but we are not. Now this ———."

"Why aren't you?"

"The manufacturers made terms with (and he named the house handling it) and they have the exclusive right. I would be glad to sell you this range because I know it to be first class and will give you excellent service."

The Range Not Better

"I suppose you're going to say that it's better than the ———."

"No, ma'am! There are none better, but there are some as good, and this is one of the makes."

"What makes you think so?"

"There are certain materials needed to make a gas range and all first-class ones get that class of material. Unless they do, they will not hold up for any length of time. The makers of this range have been in the business for years, just about as long as the makers of the ———; both are gilt-edge concerns and they are putting out the best range that skill and material can produce."

"Why did you tell me where I can get the other range? Are you afraid that this is no good?"

Now, think of that question after what he had explained? Did he get ill at ease?

Yielding to the Customer

"I did that so that you might go there and select it, because you were so desirous; still, I think if you will let me demonstrate this range, you will see that about the only difference is in the name, the price and everything else being about the same." And, before she could say another word, he had started in by saying, "Now, the ——— has this, that and this, so you see we have it, too. The ——— is somewhat lower and not as easy to peer into the oven as this is. This oven is two inches wider and four inches higher than the ——— and, of course, this is an excellent arrangement when you wish to roast a turkey or a large piece of meat, and ——."

"Why, I believe you are right!"

"Yes, ma'am, I know both ranges as well as I know my A, B, C's and I am but stating facts."

The Question of Lasting Qualities

"Then you are sure that this one will last as long as mine. I have had it five years."

"Yes, ma'am, and many years beyond five. In time the burners may give out on yours and this, but they can be renewed at a small cost."

"I believe you are honest and I think Nellie will like this better; it won't seem like the old one she and I wrestled with at home. You see, she is to be married Christmas and this is her present."

"A very wise selection on your part and I know that she or any other bride would be tickled to get such a nice gift."

Her first payment was made and she smiled at the old salesman as she left.

I said to him:

Does Not Pay to Get Peeved

"And you never even got 'sore'?"

"Why should I? I am here to sell and folks will be better satisfied if you let them have their say. I told her the truth and it's always better to demonstrate than to argue. I got to the demonstration as quick as I could, and that is what made the sale. It never pays to knock the other fellow's goods, nor to question the judgment of the customer. The ranges are about on a par and I would, if buying one myself, prefer this one because of its larger oven and its height above the floor." And he gave me a demonstration of the point that won the sale—the oven's position and dimensions.

Never Question the Judgment of the Customer

Our conversation drifted and shifted about this and that, but all the way through here was a salesman who never questions the judgment of the customer, that is, comes right out by being "brutally frank" and states that what they ask for is not worth while, even though such is the case. He lets them do most of the talking and answers their questions by demonstrating actually what he has before himself and the prospective customer, making a comparison, by a word picture, of the article that was called for, in other words, contrasting the two, and then driving home the superiority of his own goods.

Good Philosophy

"Never lose interest, no matter how seemingly stubborn the customer appears to be. A great deal of it is not stubbornness, merely a quasi-worry, an uncertainty, questioning their own judgment. To turn away and show that you are worried, or bored, will often mean the loss of a sale," is a deduction of what a real salesman told me. I saw him in action, heard him. He practiced what he preached and he made a sale that looked like it would end in a woman walking out with the old song, "I'll report you to the manager."

His is a good philosophy. It's yours if you care for it. Try it!

INDUSTRIAL GAS LESSONS

IF IT'S DONE WITH HEAT — YOU CAN DO IT BETTER WITH GAS

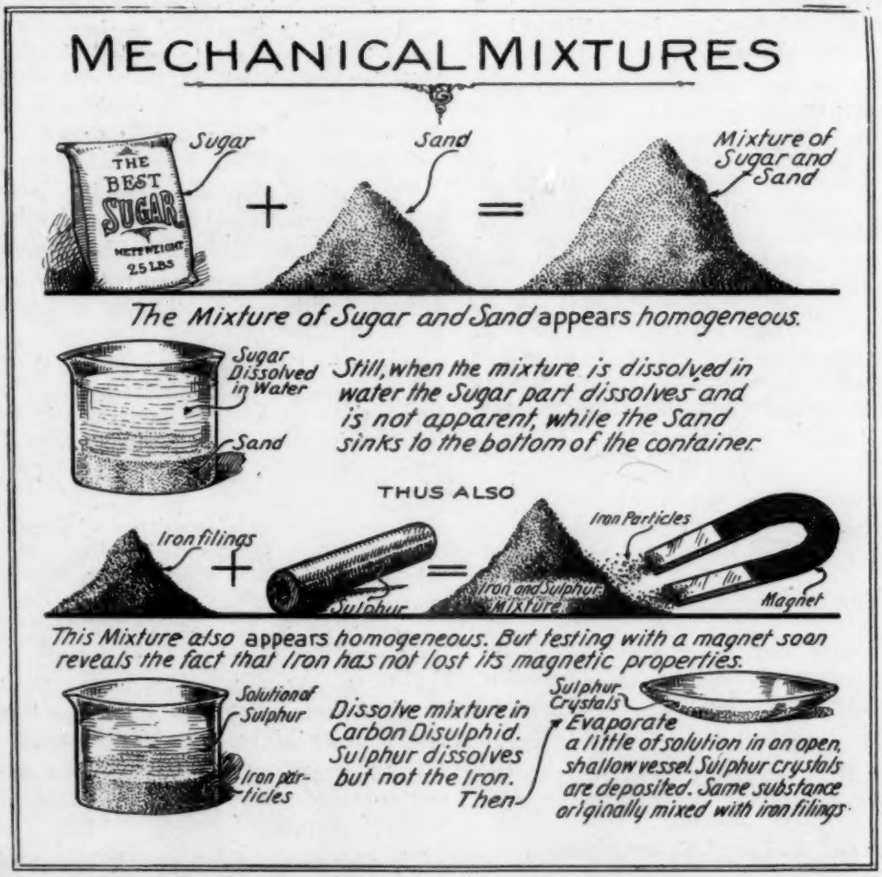
Lesson No. 99

Combustion

Definition of Combustion

Combustion or burning is simply the process in which a union or chemical combination takes place between the substance undergoing combustion or burning and the oxygen in the air. A chemical reaction takes place. Chemical reaction infers that two substances that are produced after the reaction are possessed of entirely different properties than those possessed by the materials that enter into the chemical change. In burning, a complete change takes place. The materials that are obtained differ radically from those originally started with. In other words, entirely new substances are produced. This is a prime characteristic of all chemical reactions or chemical changes.

It must be understood that chemical reaction takes place between definite substances, even though the materials that are reacted upon may be far from being identities. Thus, for example, coal will react chemically with oxygen, that is, it will burn. But coal is not what is known as a chemical entity. A chemical entity is a substance which is absolutely pure. For example, common salt is a chemical entity in a pure state. It is nothing but salt, which is a combination of sodium and chlorine. Coal is composed of various ingredients, some of which are chemically combined, and others of which are mechanically mixed. But when coal burns each and


MECHANICAL MIXTURES
Sugar
Sand
Mixture of Sugar and Sand
THE BEST SUGAR
NET WEIGHT 25 LBS
The Mixture of Sugar and Sand appears homogeneous.
Sugar Dissolved in Water
Sand
Still, when the mixture is dissolved in water the Sugar part dissolves and is not apparent, while the Sand sinks to the bottom of the container.
THUS ALSO
Iron filings
Sulphur
Iron and Sulphur Mixture
Iron Particles
Magnet
This Mixture also appears homogeneous. But testing with a magnet soon reveals the fact that Iron has not lost its magnetic properties.
Solution of Sulphur
Iron particles
Dissolve mixture in Carbon Disulphid. Sulphur dissolves but not the Iron. Then
Sulphur Crystals
Evaporate a little of solution in an open, shallow vessel. Sulphur crystals are deposited. Same substance originally mixed with iron filings.

every one of the combustible substances that are present in the fuel will enter into a separate chemical reaction with the oxygen of the air and burn.

Chemical reactions, therefore, take place between distinct substances, although the materials that are caused to react on one another may contain many ingredients. This brings up the distinction that exists between a mixture and a chemical compound. This must be understood before it is possible to appreciate what is meant by a chemical equation and a chemical reaction, such as burning. A mechanical mixture can be separated into its component parts by purely mechanical means. Thus, for example, if iron filings are mixed with sand, it is possible to separate the iron filing with the aid of a magnet. The mixture of iron filings and sand is made up of two distinct substances, each of which retains its own properties while in the mixture. On the other hand, when a mixture of iron filings and sulphur is heated a new substance is obtained. This substance will be found to contain none of the properties of the original sulphur or iron. The new substance is a chemical compound and it has been formed from iron and sulphur by chemical reaction.

Thus the iron oxide that is employed in the purification of gas is a distinct chemical compound, while the coal from which the gas is made is a mixture of various substances. Chemical reactions take place between atoms, which are the smallest conceivable sub-division of a chemical element. Elements are considered the simplest forms of chemical substances which cannot be broken down into simpler forms by any ordinary methods. Elements react to form compounds. Thus, when carbon burns in oxygen, carbon and oxygen being elements, the compound carbon dioxide is formed. There is a distinct mathematical relation between the amount of carbon that will react with oxygen. Of this, more later.

A NATIONAL CO-OPERATIVE SALES PROGRAM

(Continued from page 656)

arrangement and plan of proper ventilation in the interest of satisfactory service and the protection of public health. The local plan of organization and minimum requirements for a modern gas home are then submitted to the A. G. A. office for approval, and permission is then granted to the local operating unit to use the trademarked emblems.

Architects' and Builders' Co-operation

With a local plan organized and functioning, it is important that all the allied groups be sold on the idea and tie in with the activity. To this end we have planned a national prize contest for architects, and suggest that cash prizes be awarded for the three best sets of plans illustrating the modern home adequately and conveniently piped, vented and equipped for better gas service. This would be the means of a great amount of national publicity in educating the architects to an acceptance of the idea. At the same time it would provide plans and specifications which may be passed on to the local group in order that they may work with speculating builders in the erection and demonstration of a modern gas-equipped home to be exhibited to the people of their community at the start of the local campaign.

Appliance Manufacturers' Tie-In

The manufacturers in the industry, through the Manufacturers' Section, have agreed to tie in with the campaign by devoting a portion of the space in their national advertising and local advertising to sell the idea of the trademark with reference to standard specification material as described by the laboratory. The big job remaining, however, is to create the public acceptance of this trademark or symbol—"The Sign of a Modern Home"—as a new style, a new fad, a new standard of comfort and convenience in the home and to show that it has a real value in the real estate market should the home be built for speculation, resale or investment purposes.

Other Activities

The various committees of the section will each contribute its share to the organization and operation of the National Campaign as follows:

Sales Stimulation Committee—Further research in gas sales with special attention to a statistical study of competition.

Home Service Committee—With the aid of a competent assistant at headquarters, the study of further opportunities for establishing Home Service Departments in gas companies, efforts to promote such departments, and the preparation of a manual of policy and practice in Home Service Work.

House Heating Committee—An analytical study of the market for house heating and of successful sales methods, with a comprehensive report.

Architects and Builders Service Committee—In conjunction with the National Program, this committee proposes a national architects' contest for best designs for the modern Gas Equipped Home, similar to that conducted in Chicago last year by the Peoples Gas Light and Coke Company.

Refrigeration Committee—Intensive development and study of performance and design data of gas-fired refrigerators for domestic use.

We also propose the establishment of a Committee on Incineration by Gas and a Committee on Window Display to conduct such activities as their titles indicate.

We recommend the discontinuance of the Monthly Sales Service at the expiration of its present subscription period and its replacement by a brief weekly bulletin from A. G. A. headquarters.

As The Journal Views It

CHRISTMAS GREETINGS

The year is drawing to an end! There are only a few days left to it, but these are perhaps the most important, the most pleasurable to most of us of all the days in the year. For Christmas will soon be here with all the pleasant associations that this festival has for us.

This is the time, the season when our thoughts turn even more strongly than at any other period to our dear ones, our friends and associates, those with whom we work and labor. This is the season of the year when all are imbued with a universal feeling of good-will and kindliness toward our fellow men.

It is with a great deal of pleasure that the American Gas Journal takes this opportunity of extending its sincerest wishes for a joyful and happy Christmas holiday to all its many good friends, its advertisers, subscribers, contributors and all gas men.

GAS AND OIL

A great deal has been said about the future of oil and the future of gas and the connection that exists between these two great American industries. There have been considerable discussion and study of the oil resources of the country and governmental bureaus have seen fit to devote much time and energy in the effort to arrive at some definite conclusion as to the amount of oil that is available in the country and the length of time that it will last. However, it appears that the experts have disagreed, and this applies to the government experts as well as to those who are more or less interested in the oil business.

The question therefore arises, "What really is the status of petroleum resources in the United States and what can those industries, like the gas industry, that make use of a product, derived from oil, do to protect themselves in the future against shortage and consequent undue expense?" Or is it necessary for any such provision to be made? It is indeed a difficult task when experts disagree, for those whose knowledge of the oil industry is only slight, to arrive at a correct solution of the problem.

And it is indeed necessary that the gas men understand thoroughly the situation in the oil business. It is not only a matter of technical importance and one that concerns more the technical gas man than any other, but also a matter that is of importance in determining the attitude of the industrial gas and house heating salesmen toward his competitors.

Gas men have perhaps been inclined to look with a certain amount of disdain upon his oil competitor. This has been more accentuated during the last year or so. Ever since the knell of oil was supposedly tolled by certain authorities, they have been inclined to feel that it is not necessary to pay very much attention to oil as a fuel for industrial and house heating purposes. For if the oil companies did get the business, it would have to release it eventually to the gas companies. This is a very dangerous way in which to look upon the problem and in which to treat oil competition. And it is particularly so, now that there appears to be a wide divergence of opinion amongst oil experts as to when the oil resources of our country will actually be depleted.

Consequently, it would appear far more advisable, —even if the original forecasts of oil depletion are correct,—to continue giving industrial battle to oil competition and not to be satisfied unless oil has been replaced in every application which can be filled by gas itself. The gas industry can not afford to ignore oil competition. It cannot afford to ignore any competition, any more than any other business can. In particular because of the peculiar circumstances under which the gas industry is operating, it must not, without danger of permanently losing business, be satisfied to see a competitor like oil gain a foothold in fields that rightfully belong to gas, without making a determined effort to prevent this from happening.

In fine, the gas man must play safe as far as oil is concerned. He must continue to regard oil as a competitor, not as one that will give him very great

trouble or as one that will eventually figure in the final battle for universal fuel, but as one that can acquire business that should go to gas and hence retard its development to a certain extent. This is by far the most sensible way in which to regard the relations that exist between oil and gas, at any rate until it is definitely decided just how much longer life there is to be accorded the oil industry of the country.

BUSINESS OPTIMISM PREVAILS

(Continued from page 655)

other object but to provide for funds which ultimately will be utilized for purchases. It is the form which this purchase may take that is of importance to the market economist.

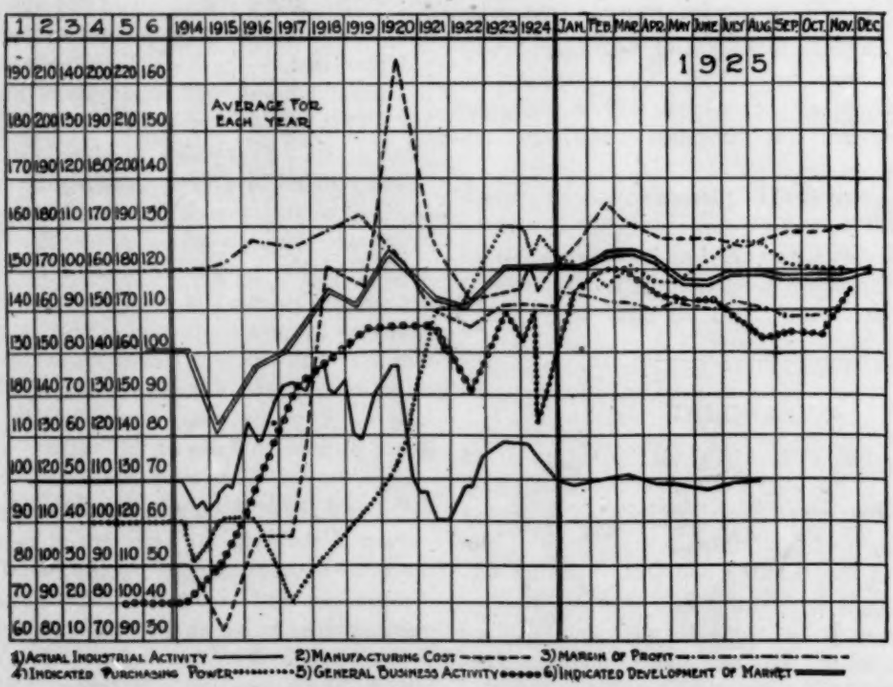
Buying of Homes and Real Estate

During the last years most of the nation's savings seems to have been turned into homes and real estate. It is this desire to find safe and permanent purchase values which has produced the recent real estate booms. But the attitude of the home buyer differs from that of the investor. The latter buys for eventual realization, the former buys for possession and continued enjoyment. So the home buyer, once having reached his object, is bound to turn to other fields. The acquisition of furniture must necessarily follow the purchase of the home. Only after this stage is reached does saving take the character of investing. It no more provides the means for immediate enjoyment, but investments are looked for to safeguard the immediate future and that of a new generation.

It appears that we have reached just now the intermediate stage, where a majority of the wage and salary earning group of Americans have settled down comfortably in their homes and are beginning to enjoy the surplus of their earnings by improving their personal condition. This is the situation of the farmer and of the large majority of the inhabitants of our medium-sized and smaller cities.

Effect of Rural Population

It is a peculiar fact that the American market, notwithstanding its enormous major city population, is still governed principally by the rural population and that of the small town. Only if the latter two prosper can the American industry expect with certainty a good market for its products. And there is no doubt at the present time of the prosperity of the hinterland. Hence business and industry are fully justified in taking a hopeful view of the situation.


1 2 3 4 5 6
1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924
JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEP. OCT. NOV. DEC.
1925
AVERAGE FOR EACH YEAR
1) ACTUAL INDUSTRIAL ACTIVITY
2) MANUFACTURING COST
3) MARGIN OF PROFIT
4) INDICATED PURCHASING POWER
5) GENERAL BUSINESS ACTIVITY
6) INDICATED DEVELOPMENT OF MARKET

But in estimating the strength of the present purchase movement it is well worth while to remember that the temper of the rural and small town market is inclined to be conservative. Not only will it make its purchases carefully, but it wants its dollar's worth for a dollar. If it exercises the virtues of the careful buyer in a normal market it is still more likely to do so now, when prosperity has still not become firmly established. So the manufacturer and jobber will be well advised to choose their ground well and avoid the mistake of overproduction and overstocking, until the market has fully

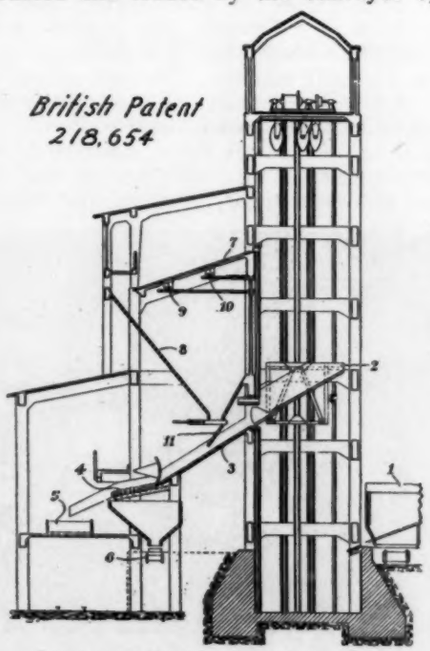
(Continued on page 666)

PROGRESS IN GAS TECHNOLOGY
Domestic and Foreign

COKE STORING, SCREENING AND LOADING

A METHOD commonly adopted for handling coke from coke ovens consists in pushing the coke out of the oven into a car, running the car under a central quenching tower, and thence transporting the coke from the car to a screening plant by means of a conveyor or elevator. This invention relates to an improvement in this system.

The coke is shot out of the quenching car 1 into the container 2. Under normal conditions it is then raised to the level of the inclined shoot 3, whereby it is delivered to the screen 4. Here the large coke is extracted and loaded by the conveyor 5, whilst

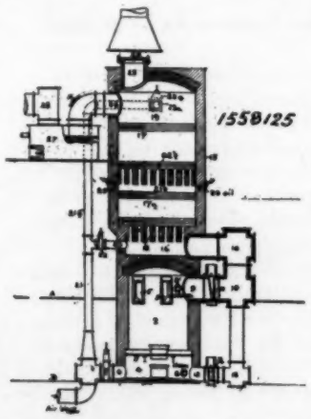


the breeze is removed at 6. In case of interruption in the screening operation (by lack of wagons or other cause) the container 2 is raised to the level of the delivery shoot 7, whereby the coke is delivered into the bunkers. When the bunker has been partly filled, according to the angle of repose of the coke, the trap door 9 is opened and subsequently, if required, the trap door 10 and so on in due order according to the number of trap doors. The trap doors are horizontally movable sliding shutters, worked from the operating platform. When the bunker 8 is full the coke can still be delivered from the quenching car directly to the shoot 3, whilst during intervals coke from the bunker can be discharged through the door 11 and delivered to the screen.—British Patent No. 218,654.

WATER GAS GENERATOR

IN the United States patent 1,558,125 there is described an apparatus for use in the manufacture of water gas.

This apparatus comprises a generator in which water gas is generated. This is seen in the accompanying illustration at 2. Connected with this generator there is an upright combined carburetter and fixer. This is indicated at 15. There is a combustion chamber in the lower part of the combined carburetter and fixer, 17A, which is in communication with the generator through openings 18. In the upper part of the combined carburetter and fixer there is a superheating chamber shown at 19. This superheating chamber has a valve-controlled escape flue, 25, for the waste products of combustion.



There are also provided in the apparatus various blast pipes with separate means of control which open separately into the combustion chamber at 23 and into the superheating chambers at 23A, thus supplying air for primary and final combustion within the chambers during the heating processes. In between the upper and lower chambers of the carburetter and fixer there is provided a checker brickwork, shown at 22B, and below that an oil vaporizing chamber indicated at 21B. There is also checker brick-work provided between the lower chamber of the carburetter and fixer and the generator. This is indicated at 18. The oil is introduced at 20 to the oil vaporizing chamber.

REDUCING UNACCOUNTED-FOR GAS

THIS is the subject of an interesting article which was published in the Gas World, 1925, pages 218 ff.

In that article the number of cases of unaccounted for gas were discussed and it was also shown how it might be possible to reduce these losses. It is plain, however, that it is scarcely to be expected that a complete remedy can be found for this difficulty. One matter which was given considerable attention in this article was the question of overworked meters. It is stated that when meters are worked within their capacity they are extremely reliable, but when they are asked to give more than normal service, after they have been in use for a period of time, they register results which are apt to react against the gas company. Various other topics discussed in the paper were the conditions of the mains and their renewal; danger from underground telephone ducts, and, in general, the methods used in testing meters. All these items are of considerable importance in determining the amount of unaccounted-for gas and careful attention to these details will undoubtedly reduce the gas losses.

FUEL OF THE FUTURE—WHAT SHALL IT BE?

(Continued from page 652)

matter to control the combustion mechanism in such a furnace as when it is fired with gaseous fuel.

In this particular application of fuel to an industrial process, specifically to the melting of brass, the importance of control of combustion gases is paramount and it is gaseous fuel which offers the brass melter the most effective and surest means of obtaining a proper atmosphere in the melting furnace. so that losses by oxidation are reduced to the lowest possible figure and at the same time there are no serious losses in unburned fuel.

The Atmosphere of the Furnace Is Important

Thus, in brass melting the atmosphere of the furnace is one of the very important conditions of the process. Metals have the capacity for oxidizing and particularly so when the temperature is high. We all know that iron will rust, that is, oxidize in air, at the ordinary temperatures. While the metallic ingredients of ordinary brass, for example, copper, zinc, tin and lead, will resist oxidation rather well at ordinary temperatures, they all oxidize rather easily, that is, combine with the oxygen in the air or in the air that is contained in the gases of combustion in the melting furnace, at the temperatures that are found in that apparatus. Thus, for example, at a temperature of 718 degrees F. the metal zinc begins to oxidize readily.

Effects of Oxidation

The effect of oxidation is two-fold and either one of the effects is detrimental to the success of the melting process. In the first place, oxidation connotes loss of metal. The finished alloy will then not contain the metals in the proportions in which they were originally mixed and this can result in serious difficulties if the oxidation goes far enough. Then, again, the oxidation results in the formation of a dross—which is the oxide of the metal—and it is often very difficult and impossible to remove all of this dross by skimming. Some of it dissolves in the molten metal and an alloy is thus obtained which possesses undesirable properties. The presence of oxides in the alloy surely reduces its strength and at times makes it more or less porous.

It is necessary to prevent this happening and when it is not possible to control the atmosphere of the furnace, as when gaseous fuel is not employed, then a layer of charcoal is spread over the surface of the molten metal, resulting in the formation of a stratum of carbon monoxide gas over the metal, or else deoxidizing substances such as prosphorus or boron suboxide are used. The point here is that the oxidation must be prevented and the best way in which to prevent it is to maintain a reducing atmosphere in the furnace.

To do this it is necessary that the combustion of the fuel be accurately controlled and this control can best be exercised in the case of gaseous fuel. This is one very marked advantage of gaseous fuel which the industrial gas engineer should emphasize very strongly in making sales in this field.

Volatilization of Zinc

Another very important consideration in the melting of brass and in the compounding of brass alloys is the volatilization of the zinc. Zinc is a metal which becomes volatile at a comparatively low temperature. This temperature, which is approximately 1,652 degrees F., is often attained in the brass melting operation. The zinc will volatilize if the molten metal is maintained for a long enough time at that temperature or if the temperature is raised considerably above this point and maintained there for a short time only. The question naturally arises, what happens to the zinc when it is melted in the form of brass? It is understandable that when the metal is melted alone its volatilization will be effected without any difficulty. It is also true that in the state of an alloy, brass, for example, zinc will behave in a similar manner. The molten alloy possesses a high vapor tension, as a general rule, and the zinc will be volatilized from the alloy.

The loss of zinc in the brass foundry is one of the most important economic losses that is incurred and still the majority of founders do not seem

Three Pot Tinning Furnace

to realize its significance. The loss is more significant than is apparent on the surface. For not only does it entail economic loss, but the composition of the alloy is altered and it is generally impossible to tell just what kind of an alloy has been made, even when additional zinc is added to the melt in order to take care of any loss of metal by overheating.

Effect of Flow of Gas

It is, of course, understandable that, as the zinc is being heated in the furnace, the flow of gases over the molten metal will tend to carry away the oxidized and volatilized zinc. The greater the rate of flow, the more zinc will be lost. However, in a furnace which is heated indirectly by the combustion gases, as can be done in the case of gaseous fuel, this condition would be materially improved.

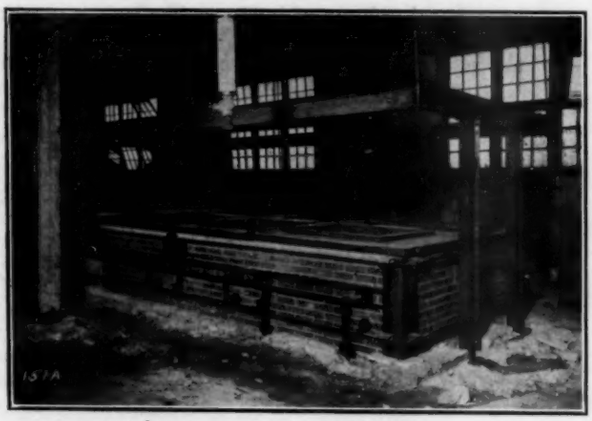
In connection with the loss of zinc by volatilization, the following table is interesting:

Alloy	Highest temperature reached in furnace deg. F.	Zinc in alloy, %	Zinc lost from sample, %	Calculated loss of zinc from the melt %
Red brass	2,386	10.2	28.6	2.9
Yellow brass ...	2,160	26.0	26.1	6.8
Gun metal	2,144	1.8	27.7	0.5
Muntz metal ...	1,900	40.5	19.0	7.7

From this table it would appear that the loss of zinc is a function of the temperature and not of the amount of zinc that is originally present in the alloy. This is, however, a point that requires further investigation before it can be accepted as the true solution of the volatilization problem.

Regulation of the Temperature

The important factor, after all, in the brass melting furnace is the temperature, and this has not been given the importance that is due to it. Each and every mixture of metals, constituting a brass alloy, possesses a temperature at which it melts and at which it can be poured out of the crucible. If such a composition of metals is brought to that temperature and maintained there for a proper length of time a finished alloy will be obtained which will



Double Four Pot Tinning Furnace

possess a certain definite composition. In other words, the loss of ingredients will be standardized and when once established it will be possible to manufacture alloys whose composition will be fairly constant. Of course, what is essential here is an accurate means of controlling the temperature and the use of a fuel whose combustion temperature admits of easy control. There is no question but that gas fills the role well. With gaseous fuel and the proper regulating apparatus it is possible to carry out the melting operation at any desired temperature and thus the losses of metal became standardized and an alloy of constant composition is obtained.

Importance of Standardization of Losses

The matter of standardization of alloy composition in brass melting is an important one and one which the gas engineer should be familiar with, for he will find that one problem which agitates the mind of the average brass melter often to the exclusion of all others is the standardization of losses of metal so as to secure uniformity in production. Gas is a fuel which lends itself well to the application of methods which have this object for their end, and it should be pushed forward as the fuel that is best suited for all purposes in the brass melting field. It is interesting to see, as we have demonstrated in a number of cases in this series of articles, how well gas adapts itself to all peculiar industrial conditions, how comparatively simple it is to make the necessary changes in manufacturing methods to allow of the use of gaseous fuel. This adaptability of gaseous fuel is its most important property, after all, for if it possessed all the other advantages that have been enumerated in detail numbers of times, nevertheless, if it was found that difficulties surrounded its use in the industrial plant, it is doubtful that it could attain such great success as it has already gained and the greater success that will be its due in the future. It will be remembered that at the very outset of this series of articles the definition of a universal fuel was given. The cases that have been cited up to the present time have demonstrated nicely just how well gaseous fuel fits that definition and it is hoped to be able to demonstrate still further in future articles how gaseous fuel fills all the conditions that are found in other and most varied industrial heating operations.

To go back to the subject of standardization of composition of alloys and particularly the brasses, it is unfortunate that the time is wanting here for going into a deep discussion of this matter, for the gas engineer should be thoroughly conversant with it. A real knowledge of this phase of the brass business will undoubtedly be of material assistance to him in solving the thermal problems that are presented by customers who operate brass foundries. The determination of the losses incurred and the methods that are employed in rebuilding the alloy are discussed in an interesting article published in The Metal Industry, volume 7, pages 217-219, and the reader is referred to this article for further information on this subject.

The Furnaces Used in Brass Melting

Two facts stand out most prominently and attract the attention of the gas engineer when examining this field for the first time. In the first place, there are a large number of different types of furnaces employed in brass melting, some being fired with coke and coal, others with oil, with electricity, and still others with gas. Then, again, there is really no particular type of furnace as far as mechanical construction is concerned which is the best for all purposes. The conditions in one brass foundry may be, and generally are, quite different from those in another. The quantities of metal handled may be very

different, and the size of castings will vary considerably. Thus, when the question of the most economical furnace arises, it is necessary to take into consideration all local conditions and design a furnace that will fit these conditions best. For example, it is evident that one plant which is making large manganese bronze propellors will not and cannot use the same design of furnace as another plant which is casting small castings out of red brass. Each has conditions which are peculiar to itself and which must be given due consideration if the right kind of furnace is to be designed and the customer given the proper service. Not only is there no best brass furnace, but there is no one type which is best. This is a much narrower limitation and one that makes it essential for the engineer who is studying this field to realize the necessity for exercising the greatest care before recommending any one particular type of furnace to any one customer.

Furnaces Divided as to Fuel Used

There are three general types of furnace as far as the character of fuel used is concerned. Thus, there are the furnaces that employ solid fuels, such as coal, coke or charcoal; the furnaces that employ liquid fuels such as fuel oil; and the furnaces that employ gaseous fuels, such as producer gas, city gas or natural gas. As far as the method of constructing the furnace is concerned, it is possible to class them as tapping, tilting and pit furnaces, or divide those which use crucible and those which do not. Then, again, there is the question of draft, which may be natural or forced. It is thus easy to see that there will be a great many different kinds of individual furnaces which will vary from one another in accordance with the character of fuel employed, with the type of construction and the nature of the draft, as well as in other special ways. For example, there may also be round and square furnaces of the following types: Natural draft pit coal, natural draft pit coke, forced draft pit coke, forced draft tilting coke, and so on. It is not necessary to go further into this matter except to call attention again to the fact that a great many varieties of furnaces are on the market and in use in the brass melting plants and a great many more types are possible.

Gas Pit Furnace

The pit furnace is that type of furnace in which a single crucible is employed and from which the crucible is lifted and carried bodily to the mold for pouring. The furnace may be located either above or below the floor level. The furnace may contain burners for oil or various kinds of gas, city gas, natural gas or producer gas. The pit furnaces of this type are almost invariably built with an upright cylindrical chamber or very rarely with one of square cross-section, for the crucible. The bricks used for this purpose are circle bricks or ring blocks which are held in a drumlike iron or steel shell. The furnaces may be sunk in the floor and the covers that close their mouths may sometimes be solid, but are mostly provided with an opening in the center through which the metal may be charged. The burner is introduced through a hole near the bottom of the furnace and sometimes points directly toward the crucible, but as often tangentially in order to produce a whirling flame, so that the crucible is encircled by this flame a number of times. Other types of pit furnaces have the burner at the bottom and a spiral baffle is inserted in order to give the whirling motion to the flame. In still another type the burner is at the top and is directed downward into a combustion chamber that is formed by enlarging the side of the furnace. The result is that the furnace has an oval cross-section and the crucible is placed eccentrically in it. Some types of furnaces have a cylindrical combustion chamber which is arranged alongside horizontally to the vertical and larger cylindrical furnace chamber proper and which is attached to the latter at the bottom. The burners are then placed in this supplementary chamber.

(Continued from page 662)

declared itself. The purchase movement now accumulating in the West and Middle West is bound to move eastward. But it cannot be expected to find its complete development until it has gained full strength in the rural markets.

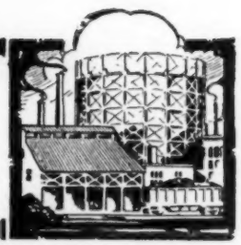
Volume of Business

The general volume of business has seen a marked increase during the last month. Care, however, must be taken in reading the barometric facts as provided by the increase in steel production, the jump in unfilled orders of the U. S. Steel Corporation and especially the reports of the clearing houses. Business has moved upon a low level for a very extended period and the sudden increase in volume does not indicate any boom conditions. It represents merely the desire of the market to make up for lost time. Any further increase or a decline which might follow it closely are the logical result of the market's attempt to find a new level of economic activity. This level is bound to be higher than the average of the last six months and, combined with the sudden spurt early this year, it will place the year 1925 substantially ahead of 1924.

As might be expected under the circumstances, there has been an improvement in the demand for labor, with wages increasing a little. This and the rise in the price of many leading industrial raw materials have added to the cost of industrial production. The cost increase, however, is apparently not large enough to cause a serious disturbance in the balance of cost of production and price. There are indications, in fact, of a widening of the industrial profit margin in favor of the industrial producer.

Few changes are expected in the general trend of affairs. Allowing for a logical development of the present situation, the outlook is good for Christmas, with every indication pointing to a return to normal conditions by spring.

NEWS OF THE GAS INDUSTRY



Industrial Men Discuss Refrigeration

Industrial Gas Association of N. E. Holds Interesting December Meeting

At the December meeting of the Industrial Gas Association, held on the 11th, at the Boston City Club at 3:30 p. m., one new member was admitted to membership, Charles H. O'Donnell, of the Lowell Gas Light Company, amendments to the constitution were presented and a very interesting discussion of gas-fired refrigeration took place.

Owing to the fact that the constitution limits membership to men in the employ of gas companies, an amendment to the constitution requiring that members who leave the employ of gas companies be dropped from membership was presented.

President E. L. Woods then called upon J. H. Sumner, who stated that the proposed New England Gas Association constitution would require minor changes in the Industrial Gas Association of New England constitution, these changes consisting of changing the name to the Industrial Gas Division of the New England Gas Association and an amendment to make these changes in the constitution was presented.

Gas-Fired Refrigeration

The speaker of the afternoon was W. R. Hainsworth, of the National Automatic Refrigerator Co., who spoke on "Gas-Fired Refrigeration." "Sixty million tons of ice," he said, "are consumed in the United States every year and to generate this refrigeration with gas would require 125 billion cubic feet of gas, or about 30 per cent of the present total send-out of all the gas companies in the country."

He stated that in 1923 there were 23,000 electric refrigerating machines in use, in 1924, 75,000, and that by the end of 1925 there would be 200,000, and pointed to this as evidence that there was a good field for development in refrigeration.

Admitting that it has been figured out on a degree day basis that there are twice as many days requiring heat as requiring refrigeration, and that the smaller gas consumption for refrigeration placed the ratio on the degree day basis 28 to 1 in favor of house heating, he stated that it was obvious a great many more refrigeration installations could be made than house heating, and for this reason refrigeration could be made to come more nearly balancing house heating, at least for many years to come, than the ratio indicated. There is also more competition to meet in securing house heating than in securing refrigeration. There is the solid fuel custom, oil, etc., and gas is more expensive than these other fuels. On the other hand, gas refrigeration is the cheapest refrigeration than can be secured. It is also silent and automatic and there is less to get out of order than in the case of other forms of refrigeration.

Theory of Refrigeration

He then took up the theory of refrigeration, explaining that when a liquid is changed to gas, heat must be absorbed, and when a gas is condensed to a liquid, heat is liberated. The temperature is determined by the pressure.

By means of diagrams on a blackboard, he showed the similarity between the compression method of refrigeration and the absorption method, the main difference in method being a pressure pump in one case and a boiler in the other. He went into the details of the control of the Sorco and the Common Sense machines, explaining that the Sorco uses a time clock and thermostat, while the Common Sense uses temperature and pressure control to change the cycles from creating pressure to creating absorption.

In an absorption machine, he stated, some absorbent material for the ammonia must be used. In the two machines mentioned water is the absorbent, but in the National machine a solid substance is used to get away from certain difficulties experienced when water is used.

Absorbents

A number of solids and liquids may be used. Copper sulphate absorbs ammonia, ammonium nitrate, calcium chloride, and others also have this property. The pressure and the temperature of the cooling water, however, determines to a considerable degree just what material is most suitable. In the machine he had on exhibition he said no water at all was present in the refrigerating circuit. In refrigerating with the absorption system it is first necessary to heat the absorbent material to drive off the ammonia under high pressure and then to cool it to reduce the pressure and draw back the ammonia. Automatic control is necessary to make the device practical for household use. To change from one operation to another this machine uses electric contacts controlled by floats in the refrigerating chamber. When the ammonia liquid rises in this chamber to a certain level, contacts are made which turn off the gas and turn on the cooling water. When the level falls to a certain point other contacts are made which turn on the gas, turn off the cooling water and start the cycle which raises the pressure, drives off the ammonia through the condenser and into the refrigerating tank.

Cost

Mr. Hainsworth next took up the matter of cost. In explaining

this he stated that one pound of ice in melting absorbs 144 B.t.u. Therefore, 100 pounds of refrigeration is represented by the absorption of 14,400 B.t.u., which is the equivalent of melting 100 pounds of ice. One hundred pounds of refrigeration, however, he informed those present, does not mean the making of 100 pounds of ice, for when water is changed to ice an additional 144 B.t.u. must be extracted for each pound of ice, to be absorbed again when the ice melts.

With electricity at 2 cents a k.w.h. and gas at 40 cents per M. cu. ft., he stated that 100 pounds of refrigeration with an electric compressor system would cost 12.9 cents, while with a gas machine it would cost 5 cents, with perhaps 2 cents more added for cooling water. With electricity at 5 cents and gas at $1, the costs would be 12.5 cents for gas and 32.3 for electricity. The water costs for the gas machine would remain the same, that is, 2 cents. With electricity at 10 cents and gas at $2, the costs would be 25 cents for gas and 64.5 cents for electricity. The water rate assumed in arriving at the water costs was $1 per M. cu. ft.

These figures show that in most communities gas refrigeration costs one-half or less of what electric refrigeration costs. In addition to this, the gas machine is silent in operation, has practically no moving parts and should show a very low rate of depreciation.

Other Advantages

A machine of about 50 pounds capacity, he said, was needed for a refrigerator of 10 cubic feet capacity and one of 100 pounds capacity for a box of 300 cubic feet in size. Though machines of smaller capacity would take care of the job during the greater part of the refrigerating season, it was necessary to install reserve capacity to handle the work during the hottest period of the year.

He said that most of the household electric machines used sulphur dioxide as the refrigerant, while the gas machines used ammonia. The average thermal efficiency of the electric compressor machine he placed as about 60 per cent, while with the absorption machine it ran 32 per cent. The economy of the gas machine thus is not due to any great efficiency of the machine, but rather that the consumer can buy more B.t.u. in the form of gas for $1 than can be bought for the same amount in the form of electric energy.

Temperature Control

The temperature control in the refrigerator is close enough to prevent a variation of more than three or four degrees and the gas consumption for the average household machine is about 100 cubic feet a day or, assuming 200 days requiring refrigeration, 20,000 cubic feet a year. The gas consumption, therefore, compares very favorably with other gas appliances sold to the customer.

One difficulty experienced is installing the units in the refrigerators at present in use and the desirability was brought out in the discussion of gaining the co-operation of refrigerator manufacturers to build boxes in which the device could be built in.

Though the gas burner consumes but 25 cubic feet of gas an hour and averages to be on but four hours a day, Mr. Hainsworth strongly recommended that it be flue connected. He stated that this portion of the installation could be set close to the chimney and that it was a very simple matter to run the necessary pipes which would always be at atmospheric temperature to the refrigerating tank in the ice box.

The usual size of the household refrigerator, he stated, is 12 to 13 cubic feet, although for apartment house use some boxes are made with only 6 to 10 cubic feet capacity. He pointed out the safety features incorporated in the gas-fired machine and thought that the best argument for gas refrigeration was the extremely low cost. The complete silence in operation is another argument in favor of the machine. The lack of moving parts and the necessity of lubricating such parts means less attention is required by the gas machine and also means that its useful life is likely to be longer.

Gas Men Hold Unique Meeting

New England Commercial Men All Called Upon to Talk

Held at the Boston City Club on Friday, December 11, at 12:30 p. m., and starting with a luncheon, the December meeting of the New England Association of Commercial Gas Managers took the form of a Christmas party, with former president Edward J. Cooney acting as master of ceremonies. The real motive back of the plan, however, was to try the experiment of having each member present say something during the course of the meeting.

At this meeting, Fred K. Foster, gas department, Keene Gas & Electric Co., Keene, N. H., and G. L. Black, Wakefield Municipal Light department, Wakefield, Mass., talked. Then President Frank F. Capen called on a few of the members present for suggestions in regard to the best policy to pursue in conducting the meetings.

All Members Talk

In this discussion the point was brought out that the organization could render a great service to its members by teaching them to talk and it was thought that the best way was to call on different members at each meeting to discuss the subject being treated at that meeting. There was some difference of opinion in regard to whether or not the member should have any advance information he was to be called on. It was brought out, however, that if no advance information was given each member would be forced to pay very careful attention to the talk given and be prepared to discuss it. In this way every member would be certain to get from the meetings much more than would be possible if attention was not forced as it would be under the proposed plan.

Though some members might be scared away for fear they would be called on for some remarks, it was thought that eventually they

would come to the meetings and would get more out of them. The importance of sales managers being able to talk was brought out. There are many organizations in every community which are looking for speakers. If the commercial manager of the gas company learns to become a good speaker he will have many opportunities to speak at these gatherings and thus can not only advertise the advantages of gas, but also create a more friendly relation toward the gas company.

Important Function Performed

It was pretty well agreed in the discussion that it was an important function of the organization to do all it could to accustom the members to get on their feet and say a few words in public. It was pointed out that in these meetings would be a good place to start doing so.

To this meeting those present had each brought a present which was placed in a box on the head table. After the business of the meeting was concluded, Edward J. Cooney was presented by President Capen and from then on took charge of the meeting.

As the presents were taken from the box and presented to the different members, each was required to say a few words about what he received. In many cases this proved a rather difficult task, even the most fluent members of the organization experiencing some difficulty when they opened their presents.

However, the meeting did have the effect of demonstrating that many members who rarely ever said anything during the course of the meeting did possess the ability to speak. It also made it clear that calling on the different members to speak resulted in getting better acquainted and greater good fellowship.

Presents Are Exchanged

A point brought out during the talks given when the presents were accepted and the discussion which preceded the distribution of presents was that it was not necessary to be afraid of duplication. Even though the same subjects were discussed which were taken up by some of the other organizations to which the members belonged, it was pretty certain a different viewpoint would be taken before the commercial managers and it is important to study each subject from as many different viewpoints as possible. Therefore, it seemed perfectly safe to go ahead and plan programs without regard to the programs being conducted by the other New England associations.

There was every reason to believe that each person attending this meeting enjoyed it and that the thought brought out that every commercial manager should practice speaking in public at every possible opportunity will bear fruit. Therefore, though the meeting was not of a serious nature, it was felt that it would have very good results.

B'KLYN UNION GETS LAND FOR WORLD'S LARGEST GAS PLANT

Company Purchases 115 Acres on Newtown Creek to Fortify Against Future Coal Shortages

Brooklyn, N. Y.—The purchase of 115 acres on which will be built the largest gas producing plant in the world has been announced by J. H. Jourdan, president of the Brooklyn Union Gas Company. The site of the proposed plant is the Cooper property on Newtown Creek.

Tentative plans for the new plant have been prepared and construction will be started in the spring, it was announced.

"Our large growth in Brooklyn and Queens makes a new gas producing plant necessary," Mr. Jourdan said.

"The company has about 650,000 customers, most of whom use gas for cooking and heating water. Thousands of industries use gas for manufacturing purposes.

"The new works will be modern in every detail. It will produce both coal and water gas. The production of coal gas gives coke as a by-product. Coke is used as fuel for making water gas. The production of coke assures a supply of fuel for gas-making when anthracite is unobtainable."

In the present shortage, Mr. Jourdan said, the company would be in difficulties were it not for the fact that in anticipation of the coal strike it accumulated a reserve supply of 150,000 tons of fuel at a cost of more than $1,500,000.

"House heating by gas is of increasing interest," he added. "In the present shortage of coal many people turn to gas for heating fuel. The continual improvement in heating appliances and the public demand for such appliances makes gas heating more and more popular."

Potrero Gas Plant to Be Enlarged

San Francisco, Calif.—Plans for alterations and additions to the Potrero gas plant of the Pacific Gas and Electric Company involving an expenditure of $189,500 have been announced. The recent completion of a tie-line down the peninsula, bringing gas delivery as far south as Los Gatos, and the greatly increased output of the San Francisco plant, according to H. Bostwick, division manager of the company, is responsible for the proposed additions.

Friday the Thirteenth a Great Day

The 13th day of November was on Friday and, of course "there's something bound to happen" if you hear some folks tell it. Their something is always the worst. Well, it did happen to Clare N. Stannard, general manager of the Public Service Company of Colorado, but it happened to be his office looking like a flower show.

"Good morning, Mr. Stannard, many happy returns of the day," said his good-looking stenographer.

"Hello, Clare," and, biff, went a slap on the back from his intimates, his hand was clasped, a mutual grin, and then Mr. Stannard remembered that it was his birthday anniversary. All day the folks came in to say Hello and to wish that they had a birthday if folks would remember them so nicely.

Mr. Stannard was born at Friendship, N. Y., started his business career in 1889 as a bank messenger. He soon joined the Doherty interests and has held 15 dif-

ferent positions with the Cities Service. He likes Denver and Denver likes him, and that's that.

The Journal extends its congratulations and says Ad Multos Annos.

East Ohio Urges Gas for Heating

Cleveland, O.—For the first time in several years, the East Ohio Gas Company is urging use of gas as an auxiliary heating fuel.

It has based this upon a quiet event that happened recently when the new $6,000,000 main, through 80 miles of West Virginia mountains, was opened to bring its first gas to Cleveland.

For years the company has tried to discourage use of gas for heating because of the dwindling supply from the old Ohio and West Virginia fields. The new source is expected to replenish the supply to such an extent that the company suggests the use of it for heating during the mild weather of fall and spring.

"We still warn it is inadequate for heating homes in cold weather," said R. W. Gallagher, vice-president of the company, "but it is the ideal fuel for this sort of weather."

The new supply comes just before the automatic increase in gas rates allowed the company under the last franchise, made two years ago. The graduated scale of higher rates goes into effect December 10. There will be no change in the 50-cent monthly service charge or in the $1 moving charge.

The New Public Service Commission in New York

Albany, N. Y.—Another shake-up of the personnel and administration of the Public Service Commission apparently will be one of the inevitable results of the adoption by the people at the November election in New York State of the governmental reorganization amendment to the constitution.

The amendment makes mandatory upon the Legislature of 1926 the dividing of the functions of government of the State into 20 groups, the enabling acts to go into effect not later than July 1, 1926. After enumerating certain functions of the comptroller and attorney general, providing that the education department shall and the agriculture and the markets departments may be governed by a regency, the amendment reads:

"Except as otherwise provided in this constitution, the heads of all other departments and the members of all boards and commissions mentioned in this article, excepting temporary commissions for special purposes, shall be appointed by the Governor, by and with the advice and consent of the Senate, and may be removed by the Governor in a manner to be prescribed by law."

Commissioners

Originally the Public Service Commission Law, as enacted in 1907, provided that the commissioners should be appointed "by the Governor, by and with the advice and consent of the Senate," and the Governor was given the right to remove any commissioner "for inefficiency, neglect of duty or misconduct in office, giving to him a copy of the charges against him and an opportunity of being publicly heard in person or by counsel in his own defense, upon not less than 10 days' notice."

Up until 1921, the term of office of public service commissioner was five years from February 1 in the calendar year in which appointed, except in the case of vacancies which were filled for the unexpired term.

The Miller Plan

In 1921, under the Miller plan of reorganization of the Public Service Commission and the Transit Commission, in order to strengthen the quasi-judicial position of the Public Service Commission, the term of office of each public service commissioner was increased to 10 years, and to remove such body from the atmosphere of politics it was provided:

"A member of the commission may be removed by concurrent resolution of both houses of the Legislature, if two-thirds of all the members elected to each house concur therein. A member shall be removed only for cause, which shall be entered on the journal, and he shall be served with a statement of the cause alleged and shall have an opportunity to be heard. On the question of removal the yeas and nays shall be entered on the journal."

Over the Transit Commission, however, the Governor was left the right of removal upon charges.

The question which now arises is, how far will the present Legislature be willing to go in tearing apart the Public Service Commission law? The same political party is in control of both houses of the Legislature which in 1921 passed the amended Public Service Commission law and the present majority leader in the Senate, John A. Knight of Arcade, Wyoming County, was the legislator who in 1921 sponsored and accepted authorship for the reorganization plan enacted that year.

Another Vital Question

Another very vital question which suggests itself is: In the event the Legislature leaves the Public Service Commission law as it now reads, will the Governor, by virtue of the constitutional amendment adopted, have the right after July 1 to arbitrarily remove a member of the Public Service Commission, after preference of the customary charges against him?

The State of Pennsylvania has just emerged from a predicament thrust upon it when the Governor sought to remove members of a similar body of that State, by main force, which action of the executive has been set aside by the courts, which held that inasmuch as concurrence was necessary to appointment, concurrence should be had in removal. The New York courts have repeatedly held, however, that legislative concurrence is not essential to the removal of a public officer, when the statute permits his removal in this way, no matter how flimsy the charge against him. It was for

this reason that the Public Service Commission law of New York State was so fixed that an executive might not treat the commission as a political patronage proposition and that reasonable permanency might be conferred upon that body.

Courts Will Have to Act

To all probabilities the courts will have to decide just how far the constitutional amendment supersedes existing law. To make the head of the Public Service Commission a two-year term office or a four-year term, subject to removal by the Governor at any time, for the sake of political expediency, the good of the service or for various other unreasonable reasons, is certainly a step backwards, but that is apparently exactly what may be expected to happen if the constitutional amendment is accepted literally by the Legislature and the courts.

Public service constitutes the 16th, out of 20 groups of government specified in section 2 of article 5 of the constitution. Except as enumerated specifically in the amendment, "the heads of all other departments and the members of all boards and commissions mentioned in this article, shall be appointed by the Governor and may be removed by the Governor in a manner to be prescribed by law."

There is a sentence in section 3 of the article reading: "Pending the assignment of the civil, administrative and executive functions pursuant to the directions of this section, the powers and duties of the several departments, boards, commissions and officers now existing are continued." This sentence has nothing to do with appointment and removal, howeevr, and is a saving clause to prevent the tearing down of present machinery of government before a new structure be erected to take its place.

Chicago Utility Concern Desires to Buy Greensburg Property

Indianapolis, Ind.—The Hoosier Public Utility Company of Chicago has filed with the Public Service Commission an application for permission to buy all the property, rights and franchises of the Greensburg Gas & Electric Co. The petition lists the reproduction cost of the Greenburg property at $486,877 and the value of the non-utility property at $5,618.

For the purpose of buying the property and providing capital, the Chicago company asks authority to issue first mortgage 20-year bonds at 6 per cent, in the sum of $250,000 and 5,000 shares of common stock of no par value.

The petition was signed by Albert Peirce, president, and M. F. Finley, secretary, of the Chicago company. A similar petition, joining in the request for authority to make the deal, was filed by the Greensburg company.

Society of Gas Lighting Holds Annual Meeting

The 50th annual meeting of the Society of Gas Lighting was held in the North Garden of the Hotel Astor, Thursday, December 10. The following officers were elected: For president, Dr. A. C. Humphreys; vice-president, Mr. William Cullen Morris; treasurer, Mr. William J. Walsh; secretary, Mr. George G. Ramsdell; member executive committee, Mr. A. E. Forstall; members finance committee, Mr. R. A. Carter, Mr. J. Arnold Norcross, Mr. E. H. Earnshaw.

G. F. Wagner Resigns from Lowell Gas Light Company

Lowell, Mass.—The resignation of George F. Wagner, for several years treasurer and clerk of the Lowell Gas Light Company, has been accepted. Mr. Wagner's successor will be John L. Eigenbrot, the present manager.

T. J. Lyons Joins Roper Organization

The Geo. D. Roper Corporation announce an addition to their sales force in T. J. Lyons, of 210 West Corning avenue, Syracuse, N. Y., in line with the company's policy in an effort for increasing service to the gas industry.

Mr. Lyons is well and favorably known in the New England and New York State territories and his many friends will be glad to learn that he has permanently associated himself with the enterprising and progressive Roper Corporation.

Mr. Lyons in his new commission will call on his friends in the territory where he is best known and will from now on sing the merits of Roper ranges and find it a privilege to give them an opportunity of using Roper sales service.

Miss G. L. Peckham Joins Norwich Gas Organization

Norwich, Conn.—Miss Gladys L. Peckham, Home Service expert, is to begin activities in the city of Norwich Gas and Electrical Department.

Miss Peckham is a graduate of Rhode Island State College in home economics and comes here from the Home Service Department of the Providence Gas Company, where remarkable strides have been made in this work since its organization. As chairman of the Division of Home Economics Teaching in the Rhode Island State Federation of Women's Clubs, Miss Peckham has gained knowledge of the need for education in home economics and she has chosen this work as an efficient way to help the home-maker.

Miss Peckham is well known to many radio listeners who have heard her home service talks broadcast through WEAN, the Shepard stores of Providence, and many Connecticut women are using recipes today that were tested and sent to them by her "over the air."

Halford Erickson Elected President Wisconsin Public Service Corporation

Halford Erickson, vice-president of H. M. Byllesby Engineering and Management Corporation, has been elected president of the Wisconsin Public Service Corporation, which recently was acquired by the Byllesby organization. Clem the company, was elected chairman ent C. Smith, former president of of the board, and J. P. Pulliam remains vice-president and general manager.

Other officers elected are: Vice-president, Robert J. Graf, Chicago,

first vice-president of H. M. Byllesby & Co.; vice-president, H. C. McKay, Milwaukee, formerly secretary-treasurer of the company; secretary, M. A. Morrison, Chicago, vice-president and treasurer of H. M. Byllesby & Co.; treasurer, C. E. Rohlhepp, Milwaukee; vice-president, C. R. Phenicie, Green Bay.

Roots Company Has Reorganization

Notice has been received that a reorganization is taking place in the official family of the P. H. & F. M. Roots Co., of Connersville, Indiana. Mr. C. C. Abbott, former vice-president and chief engineer, has been made vice-president and general manager. Mr. Abbott is a graduate of Purdue University and has been with the company for the last 12 years. Mr. E. D. Johnstone, former general manager, is relinquishing this office to Mr. Abbott and retains the position of president of the company. Mr. Charles Gordon has been made superintendent. Mr. Gordon has been with the company for about 30 years and worked his way up from office boy to his present position.

The A. G. A. Exhibit, in Which Important Phases of the Work of the Association were shown.

The Ajax Brass and Iron Co. Exhibit, Showing the Ajax Pinless "Shur-Stop" Gas Cock.

The Booth of the General Gas Light Co., Where They Roasted Good Things to Eat Before Gas-Fired Heater and Served Them to All Comers.

SOME EXHIBITS AT THE ATLANTIC CITY CONVENTION